

IN THE CLAIMS:

1. (Previously presented) In a method for the vapor deposition of thin single layer or multilayer films on a substrate, the improvement comprising:

positioning a computer controlled dynamic mask adjacent said substrate to block a portion of deposition material directed toward said substrate,

moving said mask relative to said substrate, and

controlling acceleration, velocity, and position of said dynamic mask by said computer to precisely tailor film thickness distribution.

2. (Canceled)

3. (Original) The improvement of Claim 1, wherein moving said mask is carried out to enable one or more of linear or rotational movement of said mask.

4. (Original) The improvement of Claim 1, wherein said dynamic mask is selected from the group consisting of a solid mask, and a mask with a shaped hole therein.

5. (Original) The improvement of Claim 4, wherein said shaped hole in said dynamic mask is selected from the group consisting of circular, rectangular, and complex shapes optimized for uniformity and deposition rate.

6. (Original) The improvement of Claim 1, wherein moving said mask is carried out to enable movement of said mask relative to said substrate selected from at least one of linear movement, rotational movement, single pass, multiple pass, partial pass, and complete pass.

7. (Canceled)

8. (Previously presented) The improvement of Claim 1, additionally including providing said computer with software capable of moving said dynamic mask so as to form a film on said substrate, wherein said film is selected from the group consisting of uniform thickness films and graded thickness films.

9. (Original) The method of Claim 1 wherein the vapor deposition of thin films on a substrate is carried out by using a deposition source selected from the group consisting of ion beam sputter source, electron-beam evaporation sources, ion-assisted ion beam sputter sources, and ion-assisted electron-beam evaporation sources, and wherein said dynamic mask is moved so to produce a precisely tailored film with either uniform thickness or graded thickness.

10. (Original) The method of Claim 9, wherein the film is produced to have a uniform thickness to about 0.1% across the substrate.

11-20. (Canceled)